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Care of the National Forests.

A BILL which has received general support from several influential quarters is now before Congress for the conversion of the Washington Forest-reservation into a national park. What special advantage may be expected from the conversion of this great forest-reserve, which embraces within its boundaries Mount Ranier, perhaps the noblest of the North American mountains, into a national park, we confess, is not very apparent to us. If the public have rights and opportunities in a national park which are denied to them in a forest-reservation; if roads are to be built; if any part of the forest is to be cleared up and additional facilities for camping are to be afforded under this bill, we hope that it will not be enacted at this time. Such a bill ought not to pass, for the same reason that any bill looking to a change in the boundaries of the Yellowstone National Park ought not to be favorably considered at present.

No one now has sufficient knowledge of the conditions that should govern the management of the parks and forest-reservations established by the Government in the west to speak of their future requirements with precision or authority. Millions of acres of forest-land have been withdrawn from sale and entry in the different states, but the Government has so far failed to take the necessary steps for formulating and putting into execution any plan for the care and management of these great possessions. These reservations have been made in bulk, so to speak, their actual boundaries in many cases being still unknown; they are practically unprotected against the inroads of campers, sheep-tenders and lumbermen, who are still able to prey upon these national reservations with comparative immunity from detection and punishment. In many cases it is safe to say that land has been included in the reservations and parks which could more advantageously be turned over to settlement, while in others an enlargement of boundaries might accomplish important results in the direction for which the reservations are primarily important. With all the ignorance and uncertainty in which this great question is involved, special legislation for any particular piece of Government property, we believe, would be unwise. What Congress and the President require is knowledge upon which to formulate legislation, not only knowledge of the best boundaries for each reservation, but information upon the requirements of the inhabitants of the different regions in which the reservations are situated.

A great forest-reserve, covering, perhaps, thousands of square miles, cannot be maintained in the midst of the scattered population of the far west unless its value is made apparent to the people who live near it; and their approval cannot be secured unless facilities are given under proper restrictions for obtaining timber and other forest-supplies from the Government land and for reasonable hunting and other privileges. What, then, is needed is information about the best boundaries of each reservation, upon the actual condition of their forests and water-courses and upon the needs of the people who live upon their borders, that a sensible, common-sense scheme of forest-policy may be devised.

As we have more than once suggested, information of this character can only be obtained by experts empowered to investigate the whole question of the national forests, and to devise a scheme by which it will be possible to make the reservations something more than reservations on paper. Until Congress has such a report before it no legislation should be attempted beyond such as may be absolutely necessary to enable the Secretary of the Interior or the Secretary of War to provide a sufficient military patrol for the protection of the national property against wholesale destruction. The establishment of the reservations was certainly a step in the right direction, at which every one interested in the best development of the United States had good reason to rejoice; but unless this first and easy step is to be followed by the adoption of a well-considered national policy, it had better never have been taken, for the destruction of an unprotected forest-reservation is not less certain than that the axe and fire and browsing animals will in time convert the best forest into a desert wilderness, while an unprotected Government forest, offering as it does every inducement to robbery and deceit, is a sure source of public demoralization.

In the settlement of this forest-question is the opportunity for the display of broad and enlightened statesmanship; there is no place in it for local jealousies or for the gratification of selfish or sordid ambitions. Its settlement will mean the stability and permanent prosperity of an important section of the country, and, what is of even greater importance, it will mean that the people of the United States have attained to that degree of intelligence and long-sightedness which indicate a high condition of civilization. For, certainly, the intelligent care of forests in this age is one of the best evidences of civilization, and it is a fact that the true lovers of trees and the wisest managers of forests are found among the people who stand among the nations as the recognized leaders in every intellectual and moral movement.

Stephen Elliott.

THE name of Stephen Elliott will be remembered by botanists as long as the flora of North America continues to occupy their attention, for he was the author of a work on the plants of an interesting region, based upon a knowledge of their structure, habits, characteristics and properties, obtained by studying them as he found them growing in their native wilds, and not exclusively by an examination of the dried and unsatisfactory material preserved in herbaria, upon which the knowledge found in many works of botany is from necessity or otherwise obtained.

Stephen Elliott, who was born in Beaufort, South Carolina, November 11th, 1771, was a direct descendant in the sixth generation of William Elliott, a leading merchant of Charleston, where he arrived from England in 1670, and where his name is still preserved in Elliott Street; he was a great-grandson of John Barnville on the maternal side.

He was graduated from Yale College at the age of twenty, and studied medicine, although he never practiced the profession. In 1793 Mr. Elliott was elected a member of the Legislature of South Carolina, and continued to represent his district until 1812, when he was chosen president of the new State Bank of South Carolina, a position which he filled until his death. Literary and scientific studies, however, occupied much of his time and attention. In 1813 he took an active part in establishing the Literary and Philosophical Society of South Carolina, of which he was the president. He was a constant contributor, and, probably, the real editor of the *Southern Review*, one of those short-lived periodicals whose quality is often superior to their financial strength or the appreciation of the public.

On the organization, in 1825, of the Medical College of South Carolina, Mr. Elliott was appointed professor of natural history and botany, and delivered lectures on these subjects from his chair in that institution without other recompense than the gratification of his desire to make his knowledge useful. He married Esther Habersham, of Savannah, and owned a plantation on the Ogeechee River; so that during his frequent journeys to Savannah, Charleston and Vallambrosa, the name of his Ogeechee place, Mr. Elliott had abundant opportunities to observe the vegetation of the coast-region, and to acquire an accurate knowledge of the coast-plants, which formed the basis of his *Sketch of the Botany of South Carolina and Georgia*, as the classical work is entitled, upon which now rests his reputation as a man of science.

The first volume of this book bears on the title-page the date of 1821, and the second the date of 1824. It was, however, published in parts, and Dr. Asa Gray was able to assure himself (*Am. Jour. Sci.*, ser. 3, xiii., 1877) that the first part was published as early as September 26th, 1816, and that the beginning of the second volume was issued in 1821. This work, which contains accurate descriptions in Latin and English of all plants of his region known to the author, is enriched by many observations upon the medical properties furnished by Dr. Thomas MacBride.

Mr. Elliott's herbarium is preserved in the Charleston Museum; the manuscript of his book and of several of his unpublished works, including one on shells, are owned by his granddaughter, Miss S. B. Elliott, of Sewanee, Tennessee.

Stephen Elliott died in Charleston on the 28th of March, 1830. His body lies in St. Paul's Cemetery in that city, in an unmarked and now unknown grave. His features were long preserved in the Charleston Museum in a bust which, unfortunately, was ruined by the earthquake which visited that city in 1886; and the only portrait of him which is now known to exist is a small engraving made in Philadelphia to decorate the notes of the South Carolina Bank, and now the property of his grandson, Arthur B. Elliott, of Savannah, to whom we are indebted for the opportunity to have this engraving enlarged for the illustration which is published on page 204 of this issue.

The name of Stephen Elliott is preserved, too, in a genus of plants of the Heath family, of his discovery, established by Dr. Muhlenberg (see p. 206). It consists of three shrubs; the first of these is one of the rarest of North American plants; the others are common in the forests of northern Japan.

Abbazia.

WHY the professional tourist has so long neglected the Adriatic for the Mediterranean, who can say? That times are changing in this respect is evident. Baedeker is about to rise like a fiery planet over Adria, and an innumerable multitude will soon be disporting itself along the beautiful Dalmatian and east Italian coasts. Then we who came before them all will begin to plume ourselves greatly upon our priority, regretting only, in our hearts, that even we never saw the busy port of Fiume before it had electric light and asphalt paving, handsome moles and warehouses, a grand hotel and a Hungarian grain-elevator of a wondrous pattern, and when the picturesque old water-side streets were made impassable by a high wind from the sea. As for Abbazia, nestling under the shelter of the Istrian mountains across the bay, it must have been infinitely lovelier before it was definitively discovered in this very spring of 1894 by the German Emperor and his numerous progeny. A really unnecessary proportion of the bright little place seems to have been reserved for their exclusive use, and they certainly take a great deal of guarding. A policeman or a soldier meets you at every turn, and if you linger too long in admiration of the bold coast-line, the sapphire sea, the quaint old villages on the hill-tops or the pleasant villas at their base, you will be politely requested to move on. And if you have ventured a step further, and tried to make a humble sketch of some particularly striking point, you will very likely discover that a detective has been told off to watch your further movements.

Such are the thorns concealed under the early roses of Abbazia, but, in spite of them, it remains delightful. Above all the eye revels in the wealth of greenery. The Istrian hill-sides in their natural state are almost devoid of vegetation; but plant what you will, and it seems to strike root and flourish bravely. The villa-gardens teem with intermingled vegetation from the north temperate zone and from the full tropics, and the little public park is a bewildering study in landscape-gardening. Of course, the Empress and the seven princelings have ousted the rest of the world from most of that choicest strip which skirts the shore, but one may still wander along the verdant hill-side at will, or even, at one point, follow a stretch of Daisy-studded turf that might have come from an English park, till a hedge of American Agaves shuts off the deep blue sea, with a Prussian man-of-war in the foreground, and beyond the hazy violet outlines of the gulf islands and the distant mainland. Turning back to the park once more, you see that the place derives a distinctive character for the moment from being all in green. Beds dot the turf indeed, round and oval and square, but they are filled, not with Geraniums and Azaleas, such as decorate the grounds of the neighboring villas, not even with bright Coleus, but with close-cropped mats of Dusty Miller and English Ivy, or with plumy, moss-green, southern Grasses. The Laurestinus and Lilac hedges must have bloomed last month; the hedge of Yew (Taxus baccata) will in time display its berries. Flowers are in store for us, too, on the dark-leaved Oleanders, and the last gay petal of a pink Horse-chestnut flutters down upon my hand from a point so high in air that I had not noticed it at all. Oh, avenues of the woods of Boulogne and La Cambre, you would shrivel with envy could you but see the height and vigor of that tree!

A little further on I hail with affection a Mexican Yucca, which goes here by the name of Graugrünliche Palmlilie. The east coast of the Adriatic is emphatically polyglot. German being the official tongue, we find the labels affixed to the plants in the park all printed in that language, but it is all Greek to the gardeners, who must be accosted in Italian. Rules and regulations intended for the people are formulated in Croatian, which does not appeal directly to the American intelligence. Zabranjenje ulaz one discovers, after a few lessons in the hard school of experience, means no admittance; but the significance of other warnings I have not yet learned.

It is the Yucca, by the way, which first leads us to notice that the park is peculiarly rich in American trees and shrubs, and that they have taken most kindly to their transatlantic home. The Tulip-tree and our big evergreen Magnolia are growing side by side, and the finest Sequoia gigantea I have ever seen in the Old World stands on its round of turf, stately and alone. A specially friendly gardener told me the ground had been cleared and the path laid out around it on purpose to show up its perfections when they found how well it was doing, and he bade me observe a

Cedar of Lebanon, which looked like a dwarf beside our soaring Conifer, though the trees, he assured me, were set out at the same time and were then of the same size. I wish I could feel a more implicit confidence in that gardener! He was waving in his hand as he talked a huge branch of Wistaria, intended for the decoration of the imperial apartments, and I asked him what they called it hereabout. "Glycine Chinensis," said he. "But I mean its common every-day name," said I. "Signora," he replied, with solemnity, "it has no common name; it is no common plant. In China, over the sumptuous palace of the Emperor grows the great original vine, and we of Abbazia"—here he clapped his manly breast—"we possess the solitary cutting ever made from that parent stem." 'Tis a pretty story; and so is the noble progeny a pretty sight, enwreathing, as it does, the gardener's tool-house, and intertwined with masses of yellow Banksia Roses. The luxuriance of the vine I have never seen excelled, not even by the one which drapes the walls and overarches the tables of a beer-garden close to the Cathedral in Florence. But luxuriance is the note of Abbazia's public park, from our first look to our last, which falls on a Deodar Cedar, rising above a mass of Oregon Grape (Berberis Aquifolium). All is lush and sheltered. One does not wonder, though one may not entirely rejoice, that the Emperor William has announced his intention of returning to Abbazia next spring.

Fiume, Austria. *Louise Dodge.*

Agricultural Changes in Central New York.

THE lake country of central New York has been long renowned for its beauty and picturesque interest, and it is no less remarkable for its agriculture. The Wheatlands of Seneca County, comprising the table-land lying between Cayuga and Seneca lakes, was famous before the Genesee valley became noted for its wonderful fertility; and these same farms are now as capable of producing wheat as they were a generation and more ago. But the agriculture of the beautiful hill-sides bordering the lakes is undergoing a gradual, but radical, change. The products of these farms cannot compete with western grain and western beef, and pleasure-seekers and nature-lovers are annually seeking the lake region in greater numbers. All this demands a more specialized agriculture. The first sign of the change is an almost universal desire on the part of farmers on Cayuga Lake to sell their farms. Dissatisfied with present conditions, and aware that they are unable to take up a new and aggressive line of farming, the impulse is to sell the land to those who understand the new demands and who are confident that there is both profit and pleasure for the skilled cultivator in these farms. A widespread desire in any community to sell the land always indicates the downfall of old practices and the oncoming of the new.

Already the tide of the better agriculture has set in strongly. About Keuka and Seneca lakes, to the west, fruits and special industries have long since given a high and strong incentive to farming. This success is spreading eastward, and here and there little fruit-farms are being established along the shores of Lake Cayuga.

This season has been a memorable one with the nurserymen of this section. Despite the hard times, nursery-stock at Geneva and Rochester is sold out cleaner, perhaps, than in any spring for a decade or more, and this fact enforces what I have already said concerning the change in habits of farming. Many farmers who, a few years ago, would have scorned fruit-culture, are setting out berries and peaches, and some of them now act as jobbers of nursery-stock and supply the neighborhood. Even Raspberry-plants, which can usually be had in abundance, this year have not been obtained in sufficient quantity to supply the demand in the rural districts.

Aside from peaches, which were injured by the cold weather, the fruit prospects in central New York are unusually good. Apples, pears and plums especially have given a heavy bloom, and the weather thus far has been propitious. Spraying is now practiced in almost every community. In short, farmers are beginning to look to their fruit-crop as one of the surest means of profit.

Ithaca, N. Y. *L. H. Bailey.*

Botanical Notes from Texas.—XVIII.

DISTINCT and peculiar South American Nicotiana glauca has been introduced into the gardens of south-western Texas. It is a tall, slim, small tree, sometimes twenty feet high. The light sea-green color of its leaves and newer stems will lead to its easy recognition. The species runs wild with great facility. It is becoming common in unoccupied lots, along streets and near streams. Mexicans call it Giganta, and sometimes Tronodora. Americans call it Giant, or they will tell you that it is a Eucalyptus. In one town a man told me that a lady resident there had growing in her garden a genuine Palestine Mustard, whose rapid and large growth from a very small seed was used by the Saviour to illustrate the amount of faith that would be requisite to remove a mountain. On asking to see the plant I was shown Giant.

Extensively planted in gardens in south-western Texas is Antigonon leptopus, a very handsome tall-climbing member of the Buckwheat family. It makes a wonderful display of bright red flowers in the summer, and when at the height of its flowering it has no superior here in elegance and beauty. Its leaves are very like those of its remote relative, our eastern Brunnichia. It bears no other resemblance to Brunnichia except in being a climber. Mexicans call our plant Coamscatl. I have never met this species in a wild state. It may not be indigenous to Texas, but it seems to be so much at home here, and spreads so rapidly, that it will probably run wild.

Two rather handsome cousins of the Four o'Clock family, Acleisanthes longiflora and A. Berlandieri, grow abundantly throughout south-western Texas west of the ninety-eighth meridian. They are trailing plants, with white, or sometimes purplish, flowers, with very long tubes. The flower-tube of the first-named species is sometimes six inches long.

Cladathix lanuginera is one of the most conspicuous plants of this region. It sometimes lies prone, and sometimes it forms a mass of vegetation two feet tall and a yard across. Its range is much more extensive than it is usually credited with. I have seen it growing near Otterbourne, in Thomas County, Kansas, which is only a few miles south of the fortieth parallel.

Common almost everywhere in southern Texas is the semi-tropical Tribulus maximus, a rutaceous plant, prostrate and very hairy, bearing rather handsome flowers, which are succeeded by bur-like fruits, as its generic name signifies. Plants bearing burs being older than the ancient instrument of war, tribulus, used to impede the progress of cavalry, it, too, may be supposed to have derived its name, and perhaps its form, from a bur. Our species extends northward in central Kansas to the Saline River, or to the thirty-ninth parallel.

Near San Diego I found, also, a handsome little Aristolochia, Nyctaginea capitata, one or two species of climbing Serjania, Guiacum angustifolium, and other old and new plant acquaintances, whose presence there made my short visit to the city pleasant to remember.

Kansas City, Kansas. *E. N. Plank.*

Foreign Correspondence.

Notes on Orchids.

VEITCH'S ORCHID MANUAL.—The tenth and last part of this most valuable work has just been issued. It contains a general review of the Orchideæ, including chapters on the Morphology, Fertilization, Hybridization, Geographical Distribution, with maps, Classification, a Retrospect of Orchid Culture, Orchid Amateurs of the Past, and the Literature (bibliography) of Orchideæ. Those who have followed the growth of this work, who have studied its structure, the accuracy of its information—botanical as well as horticultural—and its general excellence as a whole, will, while admiring the scientific spirit which pervades it, the utter absence of anything like trade-considerations, regret that it has not gone further and exhausted the whole subject of garden Orchids. No doubt, the immense labor attending its preparation has been a severe tax upon the resources, even of the princely house of Messrs. J. Veitch & Sons. The small genera which have been omitted are not, as a rule, of first-rate importance. What was needed,

a scientific monograph of the most important genera of garden Orchids, has been provided by Messrs. Veitch, and we are deeply indebted to them for it. Not even at Kew would it have been possible to produce such a work as this that has emanated from the great Chelsea Nursery; indeed, one may say that the only establishment where such an undertaking could be successfully worked out was that of the nursery firm which, for nearly a century, has done so much to further the interests of scientific horticulture, both by enterprise in collecting and cultivating for distribution all kinds of interesting plants, and especially Orchids.

Cœlogyne Swaniana.—I mentioned this new Orchid last week and suggested that it might prove to be a form of C. Massangeana. I have since had an opportunity to compare the two, and perceive a marked difference between them, the pseudo-bulbs and leaves of C. Swaniana being shorter than those of C. Massangeana; the flowers, too, are smaller, the pendent scapes shorter, and there are other differences besides that of color. I consider C. Swaniana (named by Mr. Sander in compliment to Mr. Swan, A.R.A., the eminent animal painter) a beautiful addition to this section of cultivated Cœlogynes. It has lately been introduced by Messrs. F. Sander & Co., in whose nursery it is now represented by numerous plants in flower. Apparently it is as easy to manage as C. Massangeana. Of this latter Messrs. F. Sander & Co. have many specimens, some of which are now bearing numerous necklace-like scapes of flowers, in some cases a yard long.

Lælia Phœbe is a hybrid of extraordinary beauty and distinctness. It was raised from L. cinnabarina and Cattleya Mossiæ by Messrs. F. Sander & Co., in whose nursery I recently saw it in flower. It has flowers five inches across, with segments as broad again as those of L. cinnabarina and a lip intermediate between that of the two parents, the color of the whole being a rich, glistening orange-buff, richer than the flesh of an apricot, with a feather-like crimson marking of the front lobe of the lip. This is a plant for which we are all ready to feel grateful to the hybridist.

Fig. 36.—Stephen Elliott.—See page 201.

Phajus grandifolius and its allies evidently are a great deal more variable than we have hitherto believed. In the St. Albans nursery at the present time there are hundreds of them in flower, so variable both in size and color that some botanists might easily find in them twenty or more good species, while others would lump them all under one species of a surprisingly varied character.

Cypripedium Annie Measures.—This hybrid between C. bellatulum and C. Dayanum was shown in flower last week by Mr. R. J. Measures, and awarded a first-class certificate by the Royal Horticultural Society. As might be expected from the extremely diverse characters of its parents, it is a well-marked plant, and an improvement upon C. bellatulum in habit and flower-color; it has prettily marbled leaves six inches long, and flowers four inches across on stalks six inches high; the petals are an inch broad, white, thickly spotted with purple; the broad, concave dorsal sepal is yellow, margined with white and lined with purple, and the narrow, compressed lip is colored purple, paler toward the point.

Bulbophyllum saurocephalum, which was shown last week by Mr. J. O'Brien, and obtained an award of merit, is an interesting species from the Philippines, remarkable for its curved flower-scape, the upper half of which is purple and thickened like a club, with the small purple and yellow flowers springing from little pits.

Cypripedium niveum is one of the most delightful of all Cypripediums when it is happy and in full flower, its elegant white flowers, sometimes speckled all over with tiny purple dots, being without equal in the genus. But it is a bad plant to manage in most collections, being more liable to the dreaded Orchid disease known as spot than any of its congeners. I am told by a friend who has seen it growing wild in the islands off the Malay Peninsula that it is always found growing on the face of limestone rocks not far from the sea, its roots nestling among the débris formed in little depressions in the rock, and its leaves exposed to full sunshine. It gets completely dried up for a portion of the year, but when the wet season returns it soon recovers and flowers profusely. No doubt, we fail with this plant through growing it in the ordinary peat mixture in a moist, shaded house, and keeping it watered all the year round.

Cattleya Schrœderæ was described as a variety of C. Trianæ by Reichenbach in 1887, when it was first introduced, and as C. Trianæ it has been reduced to a variety of C. labiata. The correct name is now C. labiata, var. Schrœderæ. Some writers have confused this plant with C. Schrœderiana of Reichenbach, now reduced to a variety of C. Walkeriana, and, of course, a very different plant from that under notice. At this time C. Schrœderæ is one of the most charming Orchids in flower, its soft and pleasing colors, variety of tints (there are a dozen or more named varieties now) and delicious, powerful fragrance being exceptionally welcome in the Orchid-house. Mr. Rolfe agrees with me that, except in these characters of fragrance and shade of color, C. Schrœderæ does not differ from what is generally known as C. Trianæ. It is a native of New Grenada, and is now sufficiently common to be easily obtainable.

Spathoglottis Kimballiana and S. aurea.—I followed Reichenbach, Veitch and Sir Joseph Hooker in looking upon these two plants as being, to all intents and purposes, identical, but, as a matter of fact, they are quite distinct, and while both are beautiful, the premier place among cultivated species of Spathoglottis must be awarded to S. Kimballiana. It has flowers fully three inches across, the segments thicker than in S. aurea, and the three outer segments (sepals) colored reddish brown at the back; in S. aurea the flower is uniformly yellow. Then there is a difference in the form of the labellum, the claw of which is broader in S. Kimballiana, and there is also a difference in the crest, which is hairy in S. aurea, glabrous in S. Kimballiana. Both species grow together, I believe, but they are not difficult to separate even when not in flower, S. Kimballiana having broader and thicker leaves than S. aurea.

Disa Hybrids.—The raising of Orchids of various kinds from seeds is now proceeding at a great rate in this country, compared with what was done in this direction a few years ago. At present few Orchid-seeds are sown, except those obtained from crosses; but I anticipate that when once the method of procedure becomes better known, this means of propagating Orchids will become general. In the principal Orchid nurseries in England there are now hundreds of thousands of young seedling Orchids of many kinds, and it is easy to comprehend the interest, and even

Fig. 37.—Elliottia racemosa.—See page 206.

1. A flowering branch, natural size. 2. Vertical section of a flower, enlarged. 3. A flower, the corolla and stamens removed, enlarged. 4. A stamen, front, side and rear views, enlarged. 5. A cross-section of an ovary, enlarged.

excitement, with which the development of these is watched. At Kew we are now watching with interest the rapid approach to blossoming of a large batch of Disas raised from seeds obtained by crossing D. grandiflora, D. racemosa, D. tripetaloides and the bybrid D. Veitchii with each other. Two of these crosses flowered last year and were named D. Premier and D. Kewensis, both good and handsome plants. Probably a hundred more will flower here before midsummer.

London. *W. Watson.*

New or Little-known Plants.

Elliottia racemosa.

ELLIOTTIA, a genus closely related to Rhododendron and Ledum, is composed, as it is now usually understood, of three species placed in three rather distinct sections distinguished by the character of the calyx-lobes and the bracts of the inflorescence, and by the number of the petals and stamens.

The type of the genus, Elliottia racemosa, of which a figure, the first which has been published, appears on page 205, is a shrub four to ten feet high, with slender, virgate, spreading branches covered with smooth, light brown bark. The leaves are alternate, oblong, acute at both ends, tipped with slender, glandular mucros, and entire; they are thin and membranaceous, conspicuously reticulate-venulose, dark green on the upper surface, pale and covered with scattered hairs on the lower surface, especially along the slender midribs, three to four inches long and an inch to an inch and a half wide, with obscure veins and slender grooved, hairy petioles, abruptly enlarged at the base and about an inch in length. The flowers, which appear in early spring, are produced in terminal racemes, or racemose panicles, six to ten inches in length, and are borne on slender pedicels two-thirds of an inch long and furnished near the middle with two minute acute scarious bractlets. The calyx, which is cup-shaped, is green, and divided to the middle into four rounded apiculate lobes, scarious and ciliate on the margins. The corolla is composed of four thin white strap-shaped slightly obovate petals rounded at the apex, half an inch long, an eighth of an inch broad, and slightly united at the very base; they are imbricated in the bud, which is oblong-obovate, and after anthesis are spreading and recurved. There are eight introrse stamens which are inserted under the margin of the thick pulvinate disk, and are about half as long as the corolla; they are composed of broad flat filaments and of sagittate erect anthers, which are attached on the back and below the middle, and are two-celled with callous-tipped cells opening longitudinally from the apex to below the middle. The ovary is sessile, subglobose, four-lobed and four-celled, and is abruptly contracted into an elongated slender declinate style enlarged at the apex into a stout incurved capitate stigma. The ovules, of which there are about six in each cell, are inserted on a thick two-lobed placenta attached to the inner angle of the cell and are flat and nearly orbicular. The fruit is unknown.

Elliottia racemosa grows in wet sandy woods and was discovered early in the century at Waynesboro', on the Savannah River, in Georgia, by Stephen Elliott. Later it was found near Augusta, Georgia, and also near Hamburg, on the South Carolina shore of the river. Of the station near Augusta, in Columbia County, the only place where Elliottia racemosa has been seen growing wild for many years, Mr. P. J. Berckmans, of Augusta, writes that "it is now entirely barren of Elliottia, the land having been cleared. Unless another locality is found, I should not be surprised if the species is now preserved only in my grounds. We succeeded in propagating a few plants from root-cuttings. The plants were kept in cold frames in winter and started nicely in the spring of 1889, but every one failed after they were planted in the open ground. I have tried root-cuttings from both hard and soft wood and root-grafts, but have only succeeded with root-cuttings. Several years ago I gave Dr. Thurber several plants taken from the woods; these have been possibly kept alive; if so, my plants are not the sole visible representatives of the species."

It is not improbable that sooner or later this beautiful shrub will be found growing in other localities in the valley of the Savannah River, or that it will in time become multiplied in gardens, where it should prove a most desirable addition to plants of its class. If, however, it is destined to disappear, the generic type and the name of the botanist it commemorates will be preserved in the two Asiatic species, which are both common inhabitants of the forests of southern Yezo and of the mountain-regions of northern and central Hondo; they will soon be seen in American gardens, although neither of them, unfortunately, equals the American species in the size and beauty of their flowers.

C. S. S.

Cultural Department.

Notes on Trees and Shrubs.

SOME of the species of American Wild Plums have this season flowered in great profusion, and have been much admired by visitors to the Arboretum. It is not often that these trees are planted for the beauty of the blossom alone, but the almost regular annual abundance of the snowy white bloom of such species as Prunus nigra and P. Americana makes them very desirable shrubs or small trees for effective planting in parks or large shrubberies. A plant or two is well deserving a place in any large garden, or they may be set along a fence, where a screen is desired, and prove quite as interesting and beautiful as the ordinary Lilacs which are usually allotted similar situations. Moreover, they may also be turned to useful account, for the fruit of some of these plants will be found quite palatable and available for culinary purposes. A number of garden varieties have been named by horticulturists, and much attention is now given to their improvement.

The two species mentioned have long been considered as one, under the name of Prunus Americana, and we find them still so classified in the last (1890) edition of *Gray's Manual of Botany*. They have, however, been divided and separately figured and described in Professor Sargent's *Silva of North America*. In the Arnold Arboretum P. nigra is usually distinguished by its first flowers opening about a week earlier than those of P. Americana in the same situation. The date of first flowering this year was April 27th. In 1893 it was May 11th; in 1892, May 3d, and in 1891, April 27th, these records being made from the same individual plants. These observations seem to show that near the end of April the season was as far advanced in 1891 as it was this year, which is generally considered unusually early.

The flowers of P. nigra are larger than those of P. Americana, but the plant is better characterized by its more stiff or rigid growth, thicker branchlets and spines, and by its larger, broader and more bluntly serrated leaves. The fruit of P. nigra is usually an inch or more in length and oblong-oval in shape, while that of P. Americana is more commonly globose than elongated. P. Americana also becomes a larger tree than P. nigra, and it has much more slender and wider-spreading, twiggy branches, the outer ends of which droop more or less, so that some plants appear almost pendulous in habit. Plants of P. Americana just twenty years old from seed are now eighteen or twenty feet high, and have branches spreading over about as great a diameter. These seeds came from Ohio, and the range of the species is western and south-western, while P. nigra appears to be the Wild Plum of the north and north-west. The fruit of P. nigra is usually yellowish red or red in color, while that of P. Americana is usually dark red, sometimes inclining to purplish, and is often sprinkled with numerous minute whitish dots and covered with a whitish or purplish bloom.

The fruits and other characters of both species vary much in different individuals; but as seen in the Arnold Arboretum, however, the constant differences between the plants raised from Vermont and from Ohio seeds are quite as marked as are to be found between Black and Scarlet Oaks, or White and Red Ashes. For ornamental planting the long drooping-branched P. Americana is to be preferred, as it also appears to be more floriferous, although both species bear a great profusion of flowers.

Prunus Allegheniensis, which was figured in the third volume of Garden and Forest, p. 429, blossoms about the same date as P. Americana, and in some respects it appears like a dwarfed form of it. Where a smaller plant than P. Americana is desired P. Allegheniensis would be a good one to use, although it does not appear to blossom as freely. Its leaves and flowers resemble those of P. Americana, but are smaller, and as the flowers fade away they change to a deep pinkish color. As grown in the Arboretum, from plants collected in Pennsylvania, the fruit is small, round, with a heavy bloom, which gives it a bluish color, and when fully mature it is of a pleasant, though slightly bitter, acid flavor. All of these Plums are very hardy, and they seem less liable to be affected by black-knot than most of the imported species and varieties. Any

particularly desirable form or variation may be readily propagated by root-cuttings. Whenever the roots of these Plums are bruised or exposed, suckers are usually produced. It is generally considered, however, that propagation by root-cuttings or suckers tends to increase the suckering habit, and, while all plants procured in this way may be relied upon as being sure to reproduce the peculiar characteristics of the parent tree, grafting on seedling stock would be more satisfactory where a single individual is desired with less tendency to sucker.

As the flowers of Prunus Americana and P. Allegheniensis begin to fall away, those of our native Beech Plum, P. maritima, open, and they are the latest blossoms found on any of the hardy Plums. A few first flowers were open on May 9th, this season, and about May 22d on the same plant last year. Three or four days after the first flowers open, the plant is in its best and fullest bloom. The flowers are produced abundantly, closely set along the rather stiff branches. They are not quite as pure a white as those of the other native Plums. As it grows near the seashore beaches, it is usually a low, straggling, stout shrub, but under cultivation and given plenty of room for development, it may assume a handsome, symmetrical, small, tree-like form. Such a plant in the Arboretum, now eighteen years old, from seed, is more than ten feet high, and its branches cover a space about fourteen feet in diameter. The small, round fruit, while usually red or purplish, is not uncommonly distinctly yellowish in color, and on some plants and in different localities it may vary much in size and edible qualities.

Arnold Arboretum. *J. G. Jack.*

Foliage-plants for Outdoor Bedding.

FOR a country of such large extent and so diverse climate as ours it is not possible to lay down positive directions for outdoor bedding or to give exact lists of plants. In the middle Atlantic states, at least as far north as New York City, the best time for planting out is the latter half of May; the ground is then usually warm, and tender-rooted species are not seriously checked by the change.

Foliage-plants are generally improved by being turned out of their pots when they are set out-of-doors. Others, again, will do equally well with the pots plunged below the surface of the soil just deep enough to prevent their drying out. Variegated Yuccas, Agaves, Hechtias, and other plants of this character, do better left in pots all the summer, for when planted out they often make so many roots, and some of them also so many suckers, that it is difficult to get the plants into pots of reasonable size when they are lifted in the fall. If there is plenty of room in the hot-house to carry large plants through the winter, it is always preferable to turn the plants out of the pots for spring planting.

The beds should be thoroughly prepared and the soil well spaded and fertilized, for foliage-plants require richer soil than is needed for flowering plants. In the latitude of Philadelphia and southward, Crotons are among the most effective foliage-plants for summer bedding, although a few degrees farther north, as we learn from Mr. Orpet's recent notes, Crotons are not successfully grown out-of-doors. Even here it is necessary to harden them well before they are planted out, and if they are brought out of a close moist house and fully exposed at once the foliage is likely to bleach and fall off. If they are grown in a light, sunny house, and have good ventilation for a week or two before the time to transplant, Crotons will scarcely drop a leaf from the change, and the foliage will increase in brightness and beauty as the season advances.

The variegated Phormiums are also good outdoor foliage-plants, and their long sword-like leaves are very effective in mixed plantings. All the varieties are extremely tough, neither wind nor sun affecting them.

Among Palms there are few more hardy than Rhapis flabelliformis and Chamærops excelsa. The majority of pinnate-leaved species are quite easily injured, with the possible exception of Areca Baueri. Farfugium grande is an old inhabitant of our gardens; it is far from common, however, although a useful ornamental plant for the house in winter, as for bedding out in summer. Out-of-doors it does best in a partially shaded spot.

Ficus plants of the various sorts are highly useful for outdoor plantings. F. elastica and its variegated form, F. Porteana, F. Chauvrieri, and, in a somewhat sheltered place, F. Parcellii may be used to advantage. Aralias and Fatsias, also, include several fine species which should be in any group of foliage-plants out-of-doors, and Hibiscus Cooperii and Phyllanthus nivosus are even more brightly colored in the open than when grown under glass.

For edgings about foliage-beds of large size I do not know anything superior to the Acalyphas, while for smaller beds Peristrophe angustifolia variegata makes an effective border.

Holmesburg, Pa. *W. H. Taplin.*

The Hardy Plant Border.

THE herbaceous border is interesting at all times. Sometimes, on account of association or rarity, one will see beauty in a modest plant which would be uninteresting to the casual observer. Lack of general effectiveness in the border is a frequent complaint, and this is probably largely due to the prevalent fashion of massing tender exotics during the summer-time for temporary effect. In many private gardens, from which the owners are absent during certain seasons, general effect can be equally well produced with perennials, and it would be well for those who intend to make borders the coming autumn to note as the season goes by such plants as appear of value to them.

In the majority of cases especial attention will be paid to the spring display, which lasts well into July. In making a collection it is best to begin with the commonest kinds, which are the cheapest and always satisfactory, since they are the easiest to take care of. A list of such should include the Tufted Pansies, in blue and yellow, the first flowers of spring and the last of autumn; the blue Mertensia Virginica, and Day Lilies in shades of yellow. Of these last, Hemerocallis graminea is sulphur-yellow and the earliest; H. Mittendorffiana, golden-yellow and medium early, and H. Thunbergii, pale yellow and later. Ajuga Genevensis, the Alpine Bugle, has deep blue flowers; A. pyramidalis, paler blue; A. reptans alba, white. The Speedwells, Veronica gentianoides and V. amethystina, are both blue. Of the Columbines, Aquilegia Canadensis, the earliest, has red flowers; A. cœrulea, the Rocky Mountain species, A. glandulosa, the large spurless species from Siberia, are blue; A. Skinneri is orange-red, and there are also many fine garden hybrids. Iris verna, I. Sibirica hæmatophylla, with fine foliage; I. oxysepala, with early dwarf, pale blue and sweet-scented flowers, besides a host of German Irises, in shades of yellow, blue, orange and purple, are all most desirable. It is here worthy of note that when planted with yellow and red flowered Ghent Azaleas these blue German Irises produce a striking effect. Trumpet Daffodils, Poet's Narcissus, Delphinium formosum, Canterbury Bells, Foxgloves, Sweet Williams, Myosotis, Phlox Carolina and P. Stelleriana, both lavender-blue; Siberian Squills and the Moss Pinks, Phlox subulata, on account of dwarf habit, effectively fill out spaces near the margin. Among Poppies are Papaver orientale, scarlet and orange; P. nudicaule, yellow, white and orange; Uvularia grandiflora, yellow. Alyssum saxatile and A. Wiersbeckei, the latter a fine yellow. Spiræa palmata, pink, and Astilbe Japonica, white. These are by no means all that are available, but they are among the cheapest and best, and enough to begin with. As the grower becomes acquainted with the plants he can add, from time to time, the newer or rarer kinds.

For a summer display Japanese Irises occupy first place. There is a wonderful richness of coloring among them. While doing well in an ordinary border, they are brought nearer perfection when so planted that during the flowering season abundance of water can be given them. Orange, red and yellow Potentillas make a brave show; so do Pyrethrum roseum, the single varieties being quite as handsome as the double ones. Thermopsis Caroliniana, with long spikes of yellow Pea-like flowers; Gypsophila paniculata, with open sprays of little white flowers, indispensable for cutting; Coreopsis lanceolata, a large-flowered clear yellow species; Campanula Van Houttei and C. macrantha, both with blue flowers, and C. persicifolia, white and blue, are among the handsomest of the Bell-flowers; Scabiosa Caucasica, with large lavender-blue flowers, a perennial Mourning Bride; Baptisia australis, with deep blue flowers; Achillea Ægyptiaca, a tall yellow Yarrow; Hollyhocks; the long-spurred yellow Columbine, Aquilegia chrysantha; Gillenia stipulacea, Liatris scariosa, Pentstemon grandifolius and P. Cobæa, two of the noblest and best; besides various species of Lilium, and many more could be used to make a fine display.

For effect in autumn the Sunflowers occupy a conspicuous place; Funkia grandiflora, the large white Plantain Lily; New England Asters, as well as Aster turbinellus, A. ptarmicoides and A. amellus; Lobelia cardinalis, Inula glandulosa, Chelone Lyoni, Japan Anemones, Campanula grandiflora, and especially the variety Mariesii, which is very dwarf; Chrysanthe-

mum lactustre; Phloxes, especially those belonging to the decussata type, and Pyrethrum uliginosum are all desirable. I might add some of the best Tritonias, but as these are not perfectly hardy they would need storage in cellars to make sure of saving them.

Seeds of biennials, including Hollyhocks, Canterbury Bells, Foxgloves, Sweet Williams and Myosotis, as well as Pansies and Violas, may be sown any time between now and the end of June, and transplanted into nursery beds. Canterbury Bells and Foxgloves make excellent pot-plants, and used with Astilbe Japonica or Deutzia gracilis, are very effective for piazza decoration.

Wellesley, Mass. *T. D. Hatfield.*

Notes on Irises.

IRIS LUPCIENS is the most interesting Iris of the week. This is one of Professor Forster's seedlings, which, as indicated by the name, is a cross between I. lupina and I. Ciengialti. It is a plant of attractive habit, the leaves being a foot long, and the flowering stems rise to double this height. The flowers are of medium size and fine form, with large falls and somewhat larger standards. The edges of the standards and falls are slightly frilled. The coloring is a pleasing shade of heliotrope, with veinings of a darker shade of the same color permeating all the petals. There is no hint of red in this flower, and it is a distinct and valuable addition to the garden. Its flowering season seems to be intermediate between those of its parents. Professor Forster's ingenious nomenclature sometimes produces curious euphony, but is a practical and common-sense invention which is a welcome relief to the ordinary method of naming hybrid plants. These names are usually unmeaning and an extra burden on the memory of the cultivator who interests himself in the origin of his plants. The new nomenclature is simple and full of meaning.

Iris Redouteana, a variety of I. lurida, is a very dwarf, richly colored flower, which is quietly effective. The flower is small, with broad standards gracefully disposed, and the long narrow falls are lateral. The color is a rich claret-red.

Iris Florentina, with its large, nearly white, flowers, is one of the most charming plants of the season, and should be in every garden. It is a reliable garden variety, and its exquisitely colored flowers have a patrician air, notwithstanding this is one of the commonest of plants. It is also commercially valuable, and many tons of its roots are each year gathered, dried and prepared to make the orris-root of trade. The finer grades of this root are used by perfumers, usually to simulate violet. It is also largely used in tooth-powders and for sachets. Of late years oils, both liquid and concrete, have been extracted from the roots, and these have proved useful to the soap-maker as well as to the perfumer. This Iris is also the only officinal species, being sometimes used in medical practice as a cathartic, and in large doses as an emetic. It is one of the older remedies, however, and is seldom used now. Other species of Irises are also in flower now, but none are specially noticeable, except I. cristata, our little crested southern Iris, which, in beauty and distinctness, is second to no dwarf Iris, and is besides a valuable plant for a front border, where its flat, creeping shoots are now covered with its cheerful light-blue flowers.

Elizabeth, N. J. *J. N. Gerard.*

Correspondence.

Fruit Prospects in Central New York.

To the Editor of Garden and Forest:

Sir,—The Apple-trees in this section have blossomed freely, and the prospect is excellent for a good crop. This is the year for an abundance of Northern Spies, Greenings and Spitzenbergs. Baldwins were not so free in blooming, but a good crop of Jonathans and Pippins of all sorts may be expected. For nearly all varieties of Pears there is a splendid outlook, excepting, possibly, Flemish Beauty. I observe that Anjou, Buffum, Rostiezer, Louise Bonne, Kieffer, Onondaga, Clairgeau, Tyson, Lawrence, Sheldon and Bartlett are all in promising condition. Plums, notwithstanding the enormous crop of last year, are again well set with fruit, as are also all kinds of Cherries. Grapes and Quinces blossoming on new wood are unfolding a wonderful bloom. A few varieties of Grapes were injured in the vine by the open winter.

Among small fruits, strawberries may be quite surely counted on to be abundant. Red Raspberries, for some reason, are killed back one-third, and the crop reduced accordingly. Black Raspberries are healthy and full of bloom. Blackberries are only moderate in set of fruit. The weather is every way favorable to the pollinization of fruit, insects abundant, and no cold winds and rains.

Clinton, N. Y. *E. P. P.*

The Beauty of Rural England.

To the Editor of Garden and Forest:

Sir,—The beauty of rural England, so famous in song and story, is due to a combination of causes in which a national love of purely artistic landscape beauty has played but a subordinate part. In art, and landscape-art is no exception, we seek for beauty of proportion, symmetry of form and harmony of color, and in the arrangement of masses of color it seems to me that the formal gardens of England do not reach that perfection of taste which one expects to find in an old country. Fortunately, it is almost impossible to mar the rich harmony produced by the intermingling of delicate pearly grays and soft greens which are everywhere in England the prevailing tints in the landscape, for wherever color is introduced to relieve the soft monotony, it too often strikes a discordant note.

The favorite border-plant last summer, both in public parks and private gardens, was Ageratum, and the contrast of the dull bluish purple of its feathery bloom with the vivid green of the grass was by no means grateful to the eye. Twenty years ago, Richard Grant White, commenting upon the dress of Englishwomen, spoke of their great fondness for shades of purple, and this fondness seems to have been passed on to the gardener of to-day. Besides the Ageratum, there were great borders and beds of dark purple Heliotrope, which is also too dull in color to give pleasure in masses. Within a little triangular grass-plot, under the very shadow of Westminster Abbey, where only grass was needed, little formal beds of Ageratum and dark Heliotrope were growing side by side. Another favorite border-plant was Lobelia, and the bright, hard, cold blue of its blossoms looked harder and colder against the vivid green of the grass. Geraniums were marvelously rich in color, but the scarlet and pink varieties, which, planted in separate beds, would have made oases of color in the vast expanse of green, were either intermingled or placed so near together that they seemed to stare each other out of countenance.

The use of flowers for table-decorations is universal, but nowhere was the best taste shown in their selection or arrangement. At Oxford, at an entertainment given at the annual meeting of the Royal British Nurses' Association, royalty was present in the person of the Princess Christian. The luncheon was served in the beautiful hall of Magdalene College, and on such an occasion one might surely expect a profusion of flowers, arranged with some attempt at grace; but the only ornaments on the tables prepared for the inferior guests were clumsy pots of an ordinary pink Begonia, placed at regular intervals, while on the table presided over by Princess Christian was a small epergne containing a handful of flowers in which, however, were the inevitable pink and scarlet Geraniums in close proximity. In the window-boxes the blending of bright colors was rather pleasing, as these always contrasted well with the rich gray of the stone cottages in the country, or with the dingy gray of the houses of the city. The flowers for sale, both in the streets of London and in the smaller cities, were inferior in quality to those offered on the streets of New York. Many of them, indeed, were so poor and straggling that they seemed fit only for an excuse to beg. These found a ready sale, even among the poor. In short, I drew the inference, though possibly on insufficient grounds, that with the English love of flowers is an instinct due primarily to the fact that these flowers are children of the soil, "the little sisters of the fields," to use St. Francis' phrase, and dear to every Englishman and woman from the thousand associations of home and childhood. It is a human affection, and, therefore, one to command respect, but it is not æsthetic, and for this reason, perhaps, the English seemed less particular than Americans are that the flowers they love should possess grace of form, fineness of texture and delicacy of color.

Orange, N. J. *A. McC. Hallock.*

Recent Publications.

L'Horticulture Française, ses Progrès et ses Conquêtes depuis 1789. Par Charles Baltet. Paris, Librairie Agricole et Librairie G. Masson.

This handsomely printed pamphlet of some 150 pages contains an address made in the Trocadéro Palace during the International Exposition of 1889 by Monsieur Baltet, a well-known horticulturist of Troyes, who was a member

of various committees and of the jury of awards in the Horticultural Department of the Exposition. It is illustrated with 110 reproductions of drawings and photographs, most of them very interesting as regards their subjects, although not all of them as well printed as the illustrations of such a work should be; and also a beautiful folding plan, on a large scale, of the exhibition which gave the author his opportunity and his text.

This text Monsieur Baltet approached from the historical, not the merely descriptive, point of view; and, rehearsing the course of French horticulture during the century of which the Exposition celebrated the completion, he produced a treatise of permanent interest and value.

The first horticultural society of Paris was born in 1827, and held its first exhibition in June, 1831, while in the interval, in 1829, the Horticultural Society of Nantes held its first "floral fête." During the past sixty years similar associations have grown up all over France to the number of 200, receiving encouragement from the central government as well as from those of the departments and the towns where they exist.

Older than any of these French societies is that famous association which held its first exhibition at Ghent in 1809; but it may be recalled that Ghent was then on French soil.

The first unofficial French horticultural journal was issued in May, 1790, under the title *Feuille d'agriculture et d'économie rurale*, soon changing its name to *Feuille du cultivateur*, and Broussonet, Parmentier, Thouin and Vilmorin were among its contributors. This paper, says Monsieur Baltet, was really the grandmother of all agricultural periodicals, although the yearly *Almanac du Bon Jardinier* was first issued in 1754, and is still in existence. The *Revue Horticole* was born in 1828, but not until 1877 does Monsieur Baltet make mention of a journal devoted to a special class of plants.

Few plants new to the kitchen-garden have been introduced into France since 1789. The most important are the Tomato, re-introduced from Spain about 1820; the New Zealand Spinach, introduced in 1802, and the Stachys, brought from Pekin in 1882. But, on the other hand, there has been a vast activity in the popularization of vegetables previously unappreciated, and in the production of new and improved varieties. From the point of view of the kitchen-gardener, says Monsieur Baltet, this century may be called "the epoch of the Potato and the Sugar Beet." More than 3,700,000 acres of French soil are now devoted to Potato-growing; and many curious attempts have been made to find a rival for this tuber, even the tubers of Dahlia and of Boussingaultia have been conscientiously tested. The subterranean culture of Mushrooms was first attempted by a gardener named Chambry in the year 1800. To-day there are more than 250 Mushroom-growers in the Department of the Seine, owning 3,000 beds, and annually producing more than ten million kilogrammes of the nutritious fungi.

The forcing of plants is mentioned by writers of the seventeenth century, but was then attempted only by a few wealthy persons. In 1735 Jean de la Quintinye offered "out-of-season" delicacies to Louis Quatorze, and his successor, Lenormand, placed before Louis Quinze, on the 24th of December, strawberries and pineapples grown in France, and at the same period melons were successfully forced. In 1776 strawberries were first forced for sale in midwinter by a gardener, who likewise grew Roses under glass. New fruits and vegetables were quickly added to the winter list, but the great development of cultivation under glass dates from about the year 1830, after the system of hot-water heating was perfected. A certain Jamain, who lived from 1787 to 1848, seems to have been the first to furnish grapes in midwinter, but the date of his first success is not mentioned.

In September, 1856, the first pomological congress was held in France, and Monsieur Baltet himself presided over it. The Pomological Society of France was soon afterward created, holding its sessions in various parts of the country. Its first medal of honor was given to Jean-Laurent Jamain in 1867.

Among interesting pomological details we may note that Monsieur Baltet names the Williams Pear, produced in England in 1770, as now holding the first commercial rank among the fruits grown in France, particularly good results having been produced by grafting it upon the American Thorn, called in that country Petit Corail—our Cratægus; and he says that the grafting of Pears upon different American Thorns may prove very beneficial as facilitating their introduction into districts where they do not flourish upon their own roots.

The interesting chapter on Dendrology embraces an account of the enormous importations of new species of ornamental and timber trees made during the century, and of the dissemination of striking varieties through the artificial propagation of natural sports. The rapidity with which an interesting tree makes a place for itself in commerce is shown by the fact that Sequoia gigantea, discovered in 1851, was introduced into France in 1853, and a single firm was able to sell 10,000 rooted cuttings in 1857, and 30,000 in 1860.

The list of our flowering plants has, of course, grown still more rapidly during the century. From the entertaining history of this development we can only refer to the forcing and blanching of Lilacs. This was practiced a century ago, but has grown to a great industry only within the last thirty or forty years. In 1870 a single gardener near Paris forced 20,000 Lilacs, and now there are 350 greenhouses in that vicinity devoted to the same purpose, while large supplies come from Nice and elsewhere. Legarde, in 1776, had forced Roses under glass, and about the year 1840 one cultivator had 50,000 Rose-trees in his greenhouses. In 1811 the *Almanac des Roses*, published in Troyes, enumerated less than 200 varieties, only six of which were remontant, while in the previous year 110 varieties had been ticketed with their names in the Empress Josephine's gardens at Malmaison. In 1829 a commercial catalogue named 1,020 varieties. The Bengal Rose was introduced from India about the year 1798, the Noisette Rose from North America in 1814, and the Bourbon Rose from the island of this name in 1817; the Tea Rose, brought from India to England in 1789, reached France about twenty years later, and the hybrids were produced by crossing these with the oriental species which had been known since the days of antiquity. The Moss Rose, introduced from England in 1807, was coaxed into a remontant habit in France about the year 1828. The passion for Orchids seems to have begun with the importation of the first Dendrobiums from India in 1812, and now some of their finest flowers may be found in quantities even in the public flower-markets of Paris. Conspicuous tropical plants with colored foliage are of still more recent introduction. Monsieur Baltet says that flowering plants of Hibiscus are largely used by the city of Paris when its buildings are decorated for public fêtes; and the fact is interesting, for, although some of the finest species are natives of our own southern states, we do not remember to have seen them utilized for decoration in this country. Dahlias were sent to France from Spain in 1802, not for their beauty, but with the idea that their tubers would be valuable for food. But they soon became favorites as ornamental plants; and the desire to produce a blue-flowered variety became such a craze that during the Irish famine of 1846 the Horticultural Society of Dublin offered a prize of £2,000 for a blue Dahlia. Without referring to the wonderful history of the Gladiolus during the past twenty-five years, we may add that the Lily-of-the-valley rivals the White Lilac in the affection of Parisians. The local market is supplied by 3,000 greenhouses and hot-beds owned by 500 gardeners, while flowers to the value of half a million francs are annually grown in the suburbs of Paris alone.

So wide was Monsieur Baltet's subject that it is no wonder he devotes but a short chapter to the architecture of gardens. What he says is historically instructive, espe-

cially with regard to the decadence toward a petty, rococo sort of treatment which marked the earlier half of our century, and from which, since about the year 1860, there has been a reaction in favor of broader and more artistic methods of landscape-work. He finds it right that a modified form of true landscape-treatment should be preferred, in a country which has become democratic, to the splendid formalities appropriate in the time of Louis Quatorze. And he notes with pardonable pride that between the years 1853 and 1889 the city of Paris expended eight millions of dollars in tree-planting, while its example was wisely and generously followed in all the other great towns of France.

Not the least interesting features of his book are the many portraits of famous horticulturists which it presents. And it is interesting to find how often the horticultural or the botanical passion has descended through several generations of the same family. The instance of the Vilmorin family, the fourth generation of which is now prominently engaged in horticultural pursuits, is already well known; and so also the family fame as botanists of the Darwins, the Hookers, the De Candolles and the Michaux. A less familiar example is illustrated by the portrait which Monsieur Baltet gives of Madame Aglaé Adanson, who lived from 1775 to 1852. This lady was the daughter of the botanical explorer who became a member of the Academy of France; in conjunction with Cels she laid out and planted a fine park and arboretum at Baleine; and two of her descendants, named Doumet, have been distinguished horticulturists.

Notes.

A neat little shrub is Cytisus purpureus, both in habit and in flower. It is prostrate, with twiggy growths, and is well adapted to a border-rockery. Just now these twigs are covered with large, pea-shaped, pink-purple flowers.

The rose season in this neighborhood began this week with the flowering of Rosa rugosa. The Moutan Pæonies are in full bloom, the earlier Pæonia tenuifolia having already matured its flowers. Columbines are the most conspicuous herbaceous plants of this time, and a majority of the species and varieties now enliven the gardens here.

Among half a dozen varieties of the common Lilac, the one that bears the name of the Berlin nurseryman, Ludwig Späth, must find a place. The flowers, which are borne in immense clusters, are nearly as dark as those of Philemon, which is still the darkest-flowered Lilac, but it is distinctly superior to that variety in its larger and broader leaves, those of Philemon being unusually narrow for a plant of the Syringa vulgaris type.

A pistillate tree of Cercidiphyllum Japonicum has produced flowers this year in Mr. John Robinson's garden, in Salem, Massachusetts. The Cercidiphyllum, which is the largest and most interesting tree of the forests of Japan, is proving itself admirably suited to flourish in the climate of our northern states, where it may be planted with advantage much more frequently than it is at present. Its peculiar habit and the beauty of its curious foliage in early spring, during summer and in autumn, when it turns bright yellow, will add interest and variety to our plantations.

The California fruit season, which began with small shipments of cherries as early as April 21st, is now fairly under way. The first apricots left Vacaville on May 4th, and these sold at wholesale in Chicago at the rate of nearly one dollar a pound. No apricots have yet reached New York, but large quantities of cherries have been received, and among varieties noticed are Early Black Guigne, Rockport and Black Tartarian. The Florida pineapple season opened here last week, and this fruit brought at the wholesale auctions nearly double the price paid for pineapples from Havana, a few fancy garden pineapples bringing as much as 35 cents each at wholesale.

Seedlings of Magnolia Fraseri auriculata, only six feet high, flowered in Mr. Thomas Meehan's nurseries, in Germantown, this spring. The flowers are large, greenish yellow in color, and are quite fragrant. On the same grounds Mohrodendron (Halesia) diptera is now in full flower, two weeks later than M. tetroptera. M. diptera, while the least hardy of these two species, does not suffer from the winters of this latitude. Mr. Joseph Meehan writes that on the 10th of May a plant of Viburnum Sieboldii, twelve feet high and ten feet in breadth, was carrying more than one thousand cymes of fully expanded flowers. It is a strong-growing, almost evergreen species, and seems disposed to make a small tree. The variety rotundifolium of Viburnum plicatum was also in perfection there a week before the type, and is well known as the Japanese Snowball. It has roundish and entire leaves, the leaf-stalks and young shoots being tinged with red.

A late number of the *Agricultural Gazette*, of New South Wales, in an interesting account of the Murray Red Gum, Eucalyptus rostrata, states that the timber is of a rich red color, darkening with age, close-grained, durable, almost as hard as iron when thoroughly dry, of interlocked fibre, difficult to split, and when sawn will rend and twist if exposed to summer heat. It is largely used for paving-blocks, street-curbings, piles in damp ground, and in the construction of wharves and bridges, where it resists the attacks of marine borers and white ants. It is also admirable for railway-sleepers, wheelwright-work, engine-buffers and similar purposes. The tree grows to a height of 200 feet, with a diameter of from four to six feet, and even more. It acquires a girth of from three feet six inches to four feet in thirty years. It is propagated from seed, which is now a regular article of commerce, and promises to be one of the most successful species of Eucalyptus in California. The exudation, or kino, of the Red Gum is a useful astringent, which has become a regular article of commerce, and is growing in favor with medical men in England, America and Australia.

Last Monday the New York Flower Mission began work for the season at 104 East Twentieth Street, in this city, and cut flowers were received from villages and towns in New Jersey, Long Island, Connecticut and along the Hudson River. Ferns, violets, Jack-in-the-pulpits, marsh marigolds, wild honeysuckle, asters and field daisies were plentiful among the wild flowers, and pansies, lilacs, sweet-scented shrubs, snowballs, wistaria and branches of fruit-blossoms came from country gardens. A touch of bright color and a fragrant flower or bit of foliage was included in each of the little bouquets, which were quickly made up by members of the Flower Mission and carried to the sick in the free hospitals and in tenement-houses. Cut flowers and fruit will be received on Monday and Thursday of each week during the next five months. In the directions for shipping issued by the society it is requested that only fresh flowers in good condition be sent, and these should have stems not more than eight inches long. Each kind should be tied in bunches and kept separate, and the flowers must be well sprinkled and covered with wet newspaper. Packages addressed to the Flower Mission not exceeding twenty pounds in weight are carried free of charge by the express companies.

The fact that the periodical cicada, or seventeen-year locust, is to appear in two large broods this year is stated in the newspapers to have been announced by the Department of Agriculture, and the statements have caused some alarm among persons who confound these insects with the true locusts or so-called grasshoppers. The Department has made no such announcement this year, although Professor Riley issued a bulletin in 1886, in which an extended appearance of these insects was predicted for this year. The Entomologist of the Department has, therefore, issued a circular to say that the damage done by these insects is generally immaterial and is confined to the slight cutting of terminal twigs of fruit and shade trees by the females in the act of laying their eggs. The injury is only serious when the cicadas are exceptionally abundant and deposit their eggs in young nursery stock. The so-called Brood XII. is of the seventeen-year form and appeared in 1877 in the neighborhood of New York, Brooklyn and Jersey City, up the Hudson River as far north as Troy, and in parts of Connecticut, New Jersey, Virginia and the District of Columbia. They may be expected in these localities during June this year. Brood XVIII. is of the thirteen-year race, and with other tredecim broods its range is rather in the southern states. Its last appearance was in 1881. The larvæ feed under ground to some extent on the roots of plants and gradually rise to the surface as they near their full growth, and from about the 20th of May to the 1st of June they make their appearance in the nymph or pupa state, crawl up the trunks of trees, cast their skin, and the winged insects come forth. The adults live for five or six weeks and do some little damage, as has been stated, to trees and shrubbery by puncturing them for egg-laying. The eggs hatch in about two weeks, and the young larvæ drop to the ground and begin their long subterranean life.